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IS 2459 (1982): Horizontal Bars Used in Gymnastics [PCD 22: Sports Goods]

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IS : 2459 - 1982

Indian Standard **(Reaffirmed 2002)**

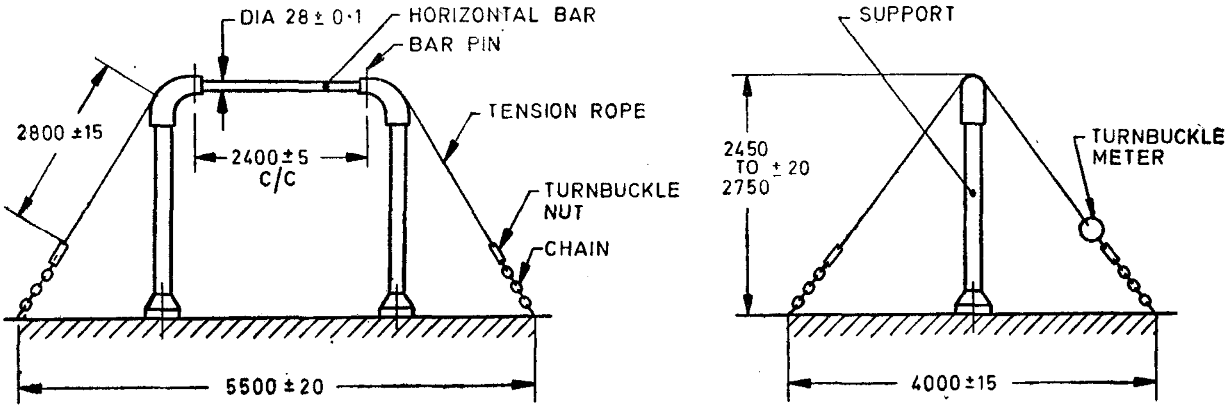
SPECIFICATION FOR HORIZONTAL BARS USED IN GYMNASTICS

(First Revision)

1. Scope — Covers requirements for horizontal bars used in gymnastic competitions and training. It does not cover the low horizontal bars used for learning.

2. Materials — The bar shall be made of stainless steel of tensile strength not less than 1 200 N/mm^2 (120 kgf/mm^2). The tension rope used shall be steel wire rope, 6 mm in diameter and of tensile strength 1 100 to 1 250 N/mm^2 (110 to 125 kgf/mm^2), conforming to IS : 2365-1977 ' Specification for steel wire suspension ropes for lifts, elevators and hoists (*first revision*)'. The tubular used for supports shall be heavy grade galvanized mild steel tubing of 40 mm nominal diameter complying with IS : 1239 (Part II)-1969 ' Specification for mild steel tubes, tubular and other wrought steel fittings: Part II Mild steel tubular and other wrought steel pipe fittings (*second revision*) '.

3. Shape and Dimensions — A typical shape of horizontal bar is shown in Fig. 1. The dimension of the horizontal bar shall be as indicated in Fig. 1. The dimensions not specified are left to the discretion of the manufacturer.



All dimensions in millimetres.

FIG. 1 DIMENSIONS OF HORIZONTAL BAR

3.1 The dimension 2 400 mm corresponding to the distance from centre to centre of the bar pins, allowing deflection of the bar in the vertical plane may be the same as the dimension from centre to centre of the supports.

3.2 The height of the bar for competitions shall be 2 550 ± 5 mm.

4. Construction, Workmanship and Finish — The surface finish of the bar shall correspond to Ra = 1·6 to 1·8 µ (*see* IS : 3073-1967 ' Specification for assessment of surface roughness'. The bar pins shall not project, in order to avoid all possibility of injury by contact with them. The upright, the turnbuckle meter, the turnbuckle nut and the chain shall be suitably treated for protection against corrosion. The seating of the bar on the supports shall be designed in such a way that the bar may swing freely and without noise in all directions. The bar shall be secured against rotation around its longitudinal axis.

4.1 It shall be possible to adjust the height of the horizontal bar between 2 450 to 2 750 mm by notches in steps of 50 mm. The horizontal bar, ready for use, shall be assembled with a tension of 1 400 ± 100 N (140 ± 10 kgf), read directly from the turnbuckle meter. The turnbuckle shall be fitted such that the right-hand thread of turnbuckle nut (between the support and the stretching device) is provided on the side towards the tension rope.

Sports Goods Sectional Committee, CPDC 4; *and* Gymnasium Equipment Subcommittee, CPDC 4 : 10 [Ref: Doc: CPDC 4 (1399)]

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5. Elasticity Test — When a test force F = 2 200 N (220 kgf) is applied at the centre of the upper face of the horizontal bar, positioned as for use, with the bar at a height of 2 550 mm, the deflection *f* shall be within 90 ± 10 mm. After removal of the load, the bar shall return to its original position (*see* Fig. 2).

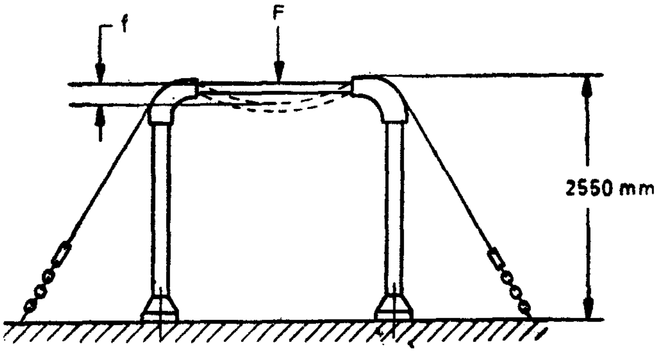

FIG. 2 ELASTICITY OF HORIZONTAL BAR

5.1 *Load Test* — When each of the four connections between support and stretching device, as well as each of the devices for attachment to the floor is subjected to a test load of 8 000 N (800 kgf) and the load is removed, there shall not be any permanent deformation.

6. Marking — The equipment shall carry the manufacturer's name or recognized trade-mark on all the interchangeable components.

6.1 *ISI Certification Marking* — Details available with the Indian Standards Institution.

EXPLANATORY NOTE

Horizontal bars are gymnastic equipment which are used both in physical training and in competitions. The gymnast performs on the bar by movements of swinging and vaulting.

This standard was first published in 1963 and was based on the draft recommendation of ISO, namely, ISO/R 487. As a result of further development in the field of gymnastics and in view of the subsequent publishing of ISO 379-1980 ' Gymnastic equipment — Horizontal bar ' issued by the International Organization for Standardization, the Committee decided to revise this standard so as to bring it in line with the ISO standard.

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